analyses show that stride duration does not fluctuate at random but in a very complex way. Indeed, consecutive strides are characterized by correlations that can span over a large number of strides reflecting a centrally controlled behavior. Long-range autocorrelations are present among stride duration variability on level ground and on treadmill (Bollens, Gait & Posture 2010). They are not influenced by gait speed and subject age whereas coefficients of variation were inversely related to walking speed and the age of the subjects (Bollens, Neuroscience 2012). Long-range autocorrelations seem robust, being influenced by neither dual task walking nor backward walking (Bollens, Ann Biomed Eng 2013). Fluctuation magnitude and dynamics could be complementary tools for more complete gait characterization, in research and in clinical practice.

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ED30-002-e

Assessment of persons with gait abnormalities in physical and rehabilitation medicine settings

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The first step in the assessment of patients with gait abnormalities in physical and rehabilitation medicine settings is a clinical examination based on the International Classification of Functioning, Disabilities and Health. Body structure, activities and participation, and environmental factors (physical and human factors) must all be assessed. Qualitative and quantified assessments of gait are part of the activity and participation evaluation. Scales are also used to assess gait activities. Gait assessment tools can be used in laboratory environments for kinematic, kinetic, electromyographic and energy consumption analysis and other tools, such as videotape and walkways, can be used in clinical practice, while ambulatory assessment tools can be used to analyse patients' usual everyday activities. The aims of instrumental gait assessment are: to understand the underlying mechanisms and the aetiology of the disorders, to obtain quantified gait parameters, to define suitable therapeutic methods, and to follow the course of the disease.

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ED30-003-e

Gait abnormalities caused by disorders of the peripheral nerves

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There are a number of different gait abnormalities that can be caused by peripheral nerve disorders. This lecture will include discussion of the findings in disorders of the peroneal nerve, tibial/sciatic nerve, femoral nerve, proximal nerves/plexus, and in radiculopathy. There will be description of the gait abnormality, clinical presentation, compensatory strategies, and treatment. Bracing and adaptive equipment will be included where appropriate.

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ED30-004-e

Abnormal gait in patients with neurological pathologies

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Keywords: Clinical gait analysis; Limp; Neurological pathologies

Knowledge about normal gait has improved considerably thanks to the use of movement analysis tools. This knowledge has led to a better understanding of pathologies requires information about the lesions and their development, the assessment of impairments and disabilities and the understanding of the compensatory strategies of the patients. The aim is to choose the right treatment for the patient in terms of drugs, prosthetics and orthotics, physical therapy and functional surgery with the aim of a functional improvement. It is therefore necessary to understand the effects of any treatment on the compensatory processes. In normal gait in adults, during the swing phase the limb has to be shortened and moved forward. During the stance phase, the lower limb has the support, propulsion and absorption functions. Gait abnormalities related to central or peripheral nervous lesions will be described here along with the corresponding compensatory strategies. It is necessary to know the exact features of normal gait to be able to analyse abnormal gait in terms of the impairments and compensatory strategies involved. The final goal of the treatment is to improve the patents' ability to walk.

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ED31-001-e

The best prosthesis

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Keywords: Amputation; Prosthesis; Rehabilitation

Introduction.– In the last decade there has been a huge development of new components, both for lower and upper limb prosthesis. The manufacturers describe their technical characteristics. By using different advertising materials and also videos on their web pages to convince professionals and users that new components are much better. The clinical question is what is the best prosthetis for each individual?

Methods.– In the lecture the literature review of published articles will be done.

Results.– There is almost none existing evidence on different prosthetic components.

Discussion.– More good polycentric clinical studies are needed that will demonstrate the benefits of new components.

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ED31-002-e

Plantar fasciitis. From etiology to treatment

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Up to 10% of the population may present heel pain over the course of their lives, which underscores the importance of the familiarity with the diagnosis and treatment of plantar fasciitis and the associated risk factors. It's a disease of overuse and/or inflammatory process of the plantar fascia. Symptoms typically appear near the calcanean origin of the fascia. It is the most common cause of pain in the barefoot. We can have: intrinsic causes, extrinsic causes, functional causes, overuse causes, there are a lot of aetiologies of heel pain and we talk about the differential diagnosis. We will talk about the treatment, including the treatment of the pain, the correction of the causes and the reeducation.

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ED31-003-e

Evidence based medicine in PRM, diagnosis and management of hand osteoarthritis (HOA)

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Keywords: Hand osteoarthritis; PRM; Diagnosis; Management

Introduction.– In this abstract, physical and rehabilitation medicine principles, diagnosis and management of HOA is outlined depending essentially on the recent Guidelines/Evidence Based Recommendations(E.B.R) and literature.